

Mathematical Reflections

4

In this investigation, you studied the relationships between the volumes of a cone, a sphere, and a cylinder with the same radius and height. You also studied the relationship between a square pyramid and a rectangular prism with the same base and height. These questions will help you summarize what you have learned.

Think about your answers to these questions. Discuss your ideas with other students and your teacher. Then write a summary of your findings in your notebook.

- 1. a.** If a cone, a cylinder, and a sphere have the same radius and height, describe the relationships among their volumes. Use examples and sketches to illustrate your answer.
- b.** If you know the radius of a sphere, how can you find the volume?
- c.** If you know the radius and height of a cone, how can you find the volume?
- 2. a.** Suppose a square pyramid and a rectangular prism have the same base and height. How do their volumes compare? Use examples and sketches to support your answer.
- b.** Suppose you know the dimensions of the base and the height of a rectangular pyramid. How could you find the volume?
- 3. a.** How are pyramids and cones alike and different?
- b.** How are prisms and cylinders alike and different?